

Soil Microbes Curb Weeds, Cut Chemical Needs

Research shows that certain organic practices can help increase numbers of beneficial microorganisms in the soil, giving it the ability to suppress weeds and reducing the need for herbicides. Practices such as growing cover crops and adding compost, manure, or organic mulch to the soil increase populations of microbes that naturally work against weed proliferation.

The weed-suppressive soils that result can be developed in most regions and shouldn't be greatly affected by climate or topography. Researchers have shown this in areas as different as the Pacific Northwest and Texas. Now they're developing easier soil tests for detecting the presence of beneficial, weed-suppressing microbes. *Robert J. Kremer, USDA-ARS Cropping Systems and Water Quality Research Unit, Columbia, Missouri; phone (573) 882-6408, e-mail kremerr@missouri.edu.*

Soda Pop Tops Teen Beverage Choices

Analysis of food consumption survey data has shown that milk drinking decreases as teen girls grow up. Of 732 girls and young women aged 12 through 19 who were surveyed, 78 percent of the 12-year-olds reported drinking milk, compared to 36 percent of 19-year-olds. The 12-year-olds also had the lowest soda intake of the sample—just 9 ounces on a given day, compared to 14 ounces for the 19-year-olds. The study was based on dietary data from USDA's Continuing Survey of Food Intakes by Individuals for the years 1994 through 1996.

Findings also showed a significant decrease in teens' milk consumption from the late 1970s to the mid-1990s. Milk drinking on the whole decreased by 36 percent over about 15 years, while soda consumption nearly doubled. Although other beverages were also consumed, the mean soda consumption far exceeded that of other beverages. This

means that other sources of the calcium needed for optimal growth and health must be tapped, including calcium-fortified juices, cereals, and soy products. *Shanthy A. Bowman, USDA-ARS Community Nutrition Research Group, Beltsville, Maryland; phone (301) 504-0619, e-mail sbowman@rbhnrc.usda.gov.*

Getting Dietary Iron From Cooking Pots

In trying to explain why certain rural populations in China experienced less iron deficiency anemia than other groups, researchers noted that those without anemia tended to use more iron pots in their cooking. So studies were undertaken in which cabbage was cooked three ways following a common recipe from northwest China. Using both aluminum and iron pots, researchers cooked fresh Chinese cabbage, fresh Chinese cabbage with vinegar, and fermented Chinese cabbage (sauerkraut).

Analysis of the cooked cabbage—using a revolutionary, ARS-developed “fake gut” that simulates human digestion—to determine actual bioavailability of the iron showed that all the dishes cooked in iron pots had higher levels of biologically available iron than those cooked in aluminum ones. Adding vinegar or cooking already acidic foods, such as sauerkraut, also seemed to cause more iron to leach from the pots and make it more available for absorption. The work was done cooperatively with scientists from Cornell University's Division of Nutritional Sciences. *Raymond P. Glahn, USDA-ARS U.S. Plant, Soil, and Nutrition Research Laboratory, Ithaca, New York; phone (607) 255-2452, e-mail rpg3@cornell.edu.*

New and Better Chocolate Trees

The world's producers of cacao are hearing good news from researchers intent on improving this good thing. Why? Because their *Theobroma cacao* trees

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Cacao pods infected with black pod fungal disease. This disease causes pods to rot on the cacao tree during the last stages of ripening.

have come under increasing attack by persistent pests that have drastically reduced their harvests. The tropical climates where *T. cacao* grows best are also perfect incubators for fungal diseases like black pod, witches' broom, and frosty pod rot. An insect known as the cocoa pod borer also takes its toll on the big seed pods full of the beans that yield the cocoa powder that is the basic ingredient of luscious chocolate confections adored by consumers everywhere. From 30 to 40 percent of the world's cacao production is lost each year.

Alerted to this serious loss, scientists have been working to develop improved *T. cacao* varieties. Nine new selections were recently released. Grown from scions of five parental families grafted onto a common rootstock, these new cacao trees yield more pods and beans than their parents. Larger yields could offset some of the losses caused by pests and diseases.

Small quantities of these selections are being made available by the U.S. National Plant Germplasm System in Mayaguez, Puerto Rico, to small landholders and to scientists interested in using them for crop-improvement purposes. *Ricardo Goenaga, USDA-ARS Tropical Agriculture Research Station, Mayaguez, Puerto Rico; phone (787) 831-3435, e-mail mayrg@ars-grin.gov.*